CLAIMS

1. Nucleotide vector comprising at least :

- a gene or complementary DNA coding for at least a portion of a virus protein, and

- a promoter allowing the expression of the gene in the muscle cells.

2. Vector according to claim 1, characterized in that the virus is that of a hepatitis.

3. Vector according to claim 1, characterized in that it does not replicate in the cells.

4. Vector according to claim 1, characterized in that the gene codes for at least a portion of the hepatitis B virus protein.

5. Vector according to claim 4, characterized in that the protein is the S, S-preS_2 or S-preS_2-PreS_1 protein.

6. Vector according to claim 4, characterized in that the gene is the S gene.

7. Vector according to claim 1, characterized in that the virus is that of hepatitis A or a non-A, non-B hepatitis, such as hepatitis C, E or delta.

8. Vector according to claim 1, characterized in that the promoter is the cytomegalovirus promoter.

9. Vector according to claim 1, characterized in that it is the pCMV-HBS plasmid filed under N° I-1370 with the CNCM on 21 October 1993.

10. Vector according to claim 1, characterized in that it is the pCMV-HBS-S1.S2.S plasmid filed with the CNCM under N° I-1411.

11. Vector according to claim 1, characterized in that it is the pCMVHB-S2.S plasmid filed with the CNCM under N° I-1410.

12. Vector according to claim 1, characterized in that it is the pRSV-HBS plasmid filed under N° I-1371 with the CNCM on 21 October 1993.

13. Vector according to claim 7, characterized in that the promoter is that of the HBV virus surface genes.

14. Vector according to claim 13, characterized in that it is the pHBV-S1.S2.S plasmid filed at the CNCM under N° I-1409.

15. Vector according to claim 7, characterized in that it includes an internal promoter.

16. Vector according to claim 6, characterized in that it comprises a cytoskeleton protein promoter.

17. Vector according to claim 16, characterized in that it comprises the desmine promoter.

18. Vector according to claim 16, characterized in that the promoter is homologous to the host to which the vector must be administered.

19. Vector according to claim 1, characterized in that it comprises the genes coding at least in part for the HIV1 virus gp160 protein associated to the p25 protein and/or the p55 protein and/or the p18 protein.

20. Vector according to claim 1, characterized in that it comprises at least one gene coding for the HIV1 virus Rev protein.

21. Nucleotide sequence comprising a promoter homologous to the host and another regulatory sequence for the expression of a gene or a DNA coding complement for S, S-preS$_2$ or S-preS1-preS2.

22. Nucleotide sequence comprising a promoter homologous to the host and another regulatory sequence for the expression of a gene or a complementary DNA coding for the gp160 protein associated with p25 and/or p55 and/or p18.

23. Nucleotide sequence comprising a promoter homologous to the host and another regulatory sequence for the expression of a gene or a DNA coding complement for the Rev protein.

24. Vaccine, characterized in that it contains at least one vector according to claim 1 or a nucleotide sequence according to claim 21.

25. Composition capable of inducing a cytotoxic response formed by at least one nucleotide sequence expressed in the muscle cells and including a promoter such as those defined in the claim 15.

26. Non-lipid pharmaceutical composition to be used in the immunization against a viral infection such as a hepatitis comprising of at least on the one hand a substance capable of inducing a coagulating necrosis of the muscle fibres and on the other hand a vector according to claim 1 or including the nucleotide sequence, complete or partial, according to claim 21.

27. Composition according to claim 26, characterized in that the substance is bupivacaine.

28. Composition according to claim 27, characterized in that the vector is administered into the muscle of the individual to be immunized, at least five days after the administration of bupivacaine, more or less in the same area.

29. Composition according to claim 28, characterized in that the vector is administered 10 days after administration of bupivacaine.

30. Composition according to one of the claims 26 to 29, characterized in that the administration is carried out by intramuscular injection.

31. Composition according to claim 30, characterized in that the intramuscular injection is carried out using a liquid jet gun.